The extent of the overflow along the Guadalupe River is shown in fig. 2.

Freshets occurred on April 7 throughout the drainage basin of the San Antonio River, but there was no extensive overflows along this stream.

Much damage resulted to agricultural interests throughout the greater portion of southwest Texas from beating and washing rains. Reports indicate that the greatest proportion of crops planted (mostly cotton) destroyed both by excessive rains and overflows was as follows in the counties named: Bastrop, three-fourths; Bexar, one-fourth; Caldwell, three-fourths; Comal, one-third; Colorado, one-half; Fayette, one-fourth; Guadalupe, one-half; Gonzales, one-third; Karnes, one-fourth; Matagorda, one-fourth; and Wilson, one-half. With average weather the crops can be replanted sufficiently early to mature a good yield should a favorable season prevail.

FLOODS IN THE BRAZOS VALLEY.

The rainfall chart, fig. 1, shows excessive rains throughout the upper portion of the drainage basin of the Brazos River. These rains filled the upper portion of the river nearly bank full. This volume of water moved slowly southward and reached the central portion of the drainage basin of the Brazos in the third decade of April. During this time general rains fell throughout the State, which maintained the Brazos River at a high stage. On April 27 and 28 excessive rains fell throughout the Brazos drainage basin, which, with the volume of water already in the river, caused a flood which approached closely to that of last July. The crest of this flood has not yet (May 15) passed out at the mouth of the river, but is in Brazoria County, where the water is within 1.8 feet of the highest water of the flood of July, 1899. A report covering the Brazos River flood of April 28 to May 15, 1900, will be prepared and forwarded for publication in the MONTHLY WEATHER REVIEW for May, 1900.

RECENT PAPERS BEARING ON METEOROLOGY.

W. F. R. PHILLIPS, in charge of Library, etc.

The subjoined list of titles has been selected from the contents of the periodicals and serials recently received in the library of the Weather Bureau. The titles selected are of papers or other communications bearing on meteorology or cognate branches of science. This is not a complete index of the meteorological contents of all the journals from which it has been compiled; it shows only the articles that appear to the compiler likely to be of particular interest in connection with the work of the Weather Bureau:

Meteorologische Zeitschrift. Wien. Band 17.

Bjerknes, V. Das dynamische Princip der Cirkulationsbewegungen in der Atmosphäre. P. 145.

Danckelman, A. v. Klima von Neu-Guinea. P. 157.

—— Vereinsnachrichten. P. 165.

—— Dr. Joseph Krist. P. 167.

—— Ausserordentlicher Schneefall in Wien und Umgebung P. 169.

Erk, —. Die wissenschaftlichen Ballonfahrten am 3 Oktober 1899. P. 171.

—— Wirksamkeit des Hagelschiessens auf unterkühlte Tröpfchen. P. 173.

Ecker, Stefan. Haloerscheinungen. P. 174.

Gockel, A. Luftelektricität und Temperatur. P. 175.

Moller, A. Ueber Umbildung von Cumuluswolken. P. 176.

Suring, R. Verschiedene Arten von Haufenwolken. P. 177.

Flogel, Dr. Bildung von Cumulus-Wolken durch eine Feuersbrunst. P. 179.

Hann, J. Haufenwolken über einer Feuersbrunst Leuchtende Nachtwolken. P. 182.

Koppen, W. Hauptsätze über die Temperaturvertheilung in der Erdatmosphäre. P. 182.

Mack, K. Eine ungewöhnliche Luftspiegelung. P. 187.

—— Meteorologische Beobachtungen im Innern von China. P. 189.

Petermann's Mitteilungen. Gotha. 46 *Band.*

Pettersson, O. Die Wasserzirkulation im Nordatlantischen Ozean. (Schluss). P. 81.

Nature. London. Vol. 61.

Rotch, A. L. The eclipse wind. P. 589.

Clayton, H. H. Recent Exploration in the Upper Air and its bearing on the Theory of Cyclones. P. 611.

Himmel und Erde. Berlin. 12 *Jahrg.*

Hapke. Die Warmwasserteiche an der Westküste Norwegens. P. 316.

Geographical Journal. London. Vol. 15.

Schott, G. Oceanographical and Meteorological Work of the German "Valdivia" Expedition. P. 518.

Ciel et Terre. Bruxelles. 21*me Année.*

Zeuger, C. V. La Météorologie électrodynamique et son application à la prévision des grandes perturbations atmosphèrique. P. 109.

Sitzungsberichte der kaiserlichen Preussischen Akademie der Wissenschaften. Berlin. 1900.

Bezold, W. v. Zur Thermodynamik der Atmosphäre P. 356.

Archives des Sciences Physiques et Naturelles. Genève. 4 *Période. Tome* 9.

Gautier, R. Observations météorologiques faites aux fortifications de Saint Maurice pendant l'année 1898. (Suite et fin). P. 334.

Das Wetter. Berlin. 17 *Jahrg.*

Assman, R. Die Sonnenstrahlung. P. 81.

OBSERVATIONS AT HONOLULU.

Through the kind cooperation of Mr. Curtis J. Lyons, Meteorologist to the Government Survey, the monthly report of meteorological conditions at Honolulu is now made partly in accordance with the new form, No. 1040, and the arrangement of the columns, therefore, differs from those previously published.

Meteorological observations at Honolulu, March, 1900.

The station is at 21° 18′ N., 157° 50′ W.

Pressure is corrected for temperature and reduced to sea level, and the gravity correction, —0.06, has been applied.

The average direction and force of the wind and the average cloudiness for the whole day are given unless they have varied more than usual, in which case the extremes are given. The scale of wind force is 0 to 12, or Beaufort scale. Two directions of wind, or values of wind force or amounts of cloudiness, connected by a dash, indicate change from one to the other.

The rainfall for twenty-four hours has always been measured at 10:29 p. m., not 1 p. m., Greenwich time, on the respective dates.

The rain gage, 8 inches in diameter, is 1 foot above ground. Thermometer, 9 feet above ground. Ground is 43 feet, and the barometer 50 feet above sea level.

Date.	Pressure at sea level.	Temperature.		During twenty-four hours preceding 1 p. m., Greenwich time, or 2:29 a. m., Honolulu time.									Total rainfall at 9 a. m., local time.
				Temperature.		Means.		Wind.		Average cloudiness.	Sea-level pressures.		
		Dry bulb.	Wet bulb.	Maximum.	Minimum.	Dew-point.	Relative humidity.	Prevailing direction.	Force.		Maximum.	Minimum.	
	*	†	†			‡	‡		§				
1	29.98	70	59.5	78	66	58.5	68	ne.	4	4	30.04	29.94	0.02
2	29.96	70	62	77	68	55.0	60	nne.	4-2	4	30.02	29.94	0.02
3	29.94	71	63.5	78	66	58.7	62	ne.	4	5	30.01	29.90	0.00
4	29.99	66	64	80	70	61.7	71	ne.	3	7	30.05	29.95	0.08
5	29.98	63	62	81	64	63.5	78	ne.	3	3	30.04	29.94	0.25
6	29.88	66	63	79	62	63.5	78	w.	1	3-8	30.00	29.87	0.00
7	29.89	67	65	79	65	64.7	75	sw.	1	4-10	29.93	29.84	0.00
8	29.89	68	66	79	67	66.5	81	sw.	3	9	29.93	29.85	0.15
9	29.90	60	57.5	80	66	66.3	80	sw-w.	3	‖	29.94	29.83	0.01
10	29.95	59	57	78	60	56.3	66	w.	3-0	2-4	29.98	29.86	0.00
11	29.90	63	59.5	76	59	57.3	72	sw-s.	2	2-5	29.99	29.90	0.00
12	29.80	72	57	78	60	59.3	67	w-sw.	3	4	29.94	29.82	0.06
13	29.85	59	55.5	79	66	60.7	66	w.	4	8-0	29.87	29.78	0.00
14	29.90	61	59	78	59	55.3	65	sw.	3-1	1-5-1	29.96	29.84	0.00
15	29.98	61	58	78	60	58.7	71	sw.	2-0	3	30.03	29.90	0.00
16	29.93	68	65	80	60	59.7	70	sw.	1-0	¶	30.06	29.93	0.00
17	29.96	66	63.5	81	66	63.3	72	sw.	2	3-6	30.01	29.93	0.02
18	30.00	68	65.5	79	65	62.0	68	n-ne.	0-3	3	30.05	29.98	0.60
19	30.02	71	65	78	66	64.0	77	ne.	0-3	10-5	30.06	29.97	0.01
20	30.00	73	65	80	66	62.3	65	ne.	3	3-7	30.07	29.97	0.05
21	30 04	72	65.5	78	70	61.5	63	ne.	3-5	5	30.08	29.98	0.24
22	30.03	72	65	78	68	62.5	66	ne.	5	4	30.09	30.00	0.07
23	30.04	73	66.5	80	70	62.7	67	ene.	5	5	30.09	30.00	0.02
24	30.02	73	65	79	72	62.3	67	ene.	4	4	30.11	30.01	0.01
25	30.03	73	66	79	72	60.5	61	ne.	4	5	30.12	30.03	0.05
26	29.98	68	64	79	72	61.3	64	ne.	4	4	30.06	29.97	0.01
27	29.93	71	63.5	81	68	61.0	64	ne.	2-4	1	30.01	29.90	0.00
28	29.95	71	64.5	81	71	60.0	61	nne.	3	2	30.00	29.90	0.00
29	29.96	65	63	82	70	62.0	68	ne.	3-0	4	30.02	29.90	0.00
30	29.97	69	62.5	80	64	63.3	77	s.	1	4	30.04	29.94	0.00
31	29.97	62	58.5	79	63	57.7	61	nne.	3	1	30.04	29.95	0.00
Sums.													1.67
Means.	29.955	67.5	64.5	79.1	65.7	61.0	68.6		2.2	4.3	30.02	29.92	
Departure.						—0.5	—4.0			—0.3			—1.60

Mean temperature for March, 1900 (6+2+9)+3=71.8°; normal is 70.6°. Mean pressure for March (9+3)+2 is 29.97; normal is 29.99.

Meteorological observations at Honolulu, April, 1900.

Date.	Pressure at sea level.	Temperature.		During twenty-four hours preceding 1 p. m. Greenwich time, or 2:30 a. m., Honolulu time.							Sea-level pressures.		Total rainfall at 9 a. m., local time.
		Dry bulb.	Wet bulb.	Temperature. Maximum.	Temperature. Minimum.	Means. Dew-point.	Means. Relative humidity.	Wind. Prevailing direction.	Wind. Force.	Average cloudiness.	Maximum.	Minimum.	
	*	†	†			‡	‡		§				
1	30.00	70	62.5	80	62	57.7	65	nne.	3-0	2	30.05	29.95	0.00
2	30.01	72	67.5	79	65	61.7	67	ene.	3-0	2	30.07	29.97	0.00
3	30.05	69	66.5	82	67	65.5	71	e.	3-0	3-8	30.11	30.02	0.00
4	30.04	68	65.5	82	69	66.5	75	sw.	2	3-10	30.12	30.03	0.00
5	30.05	72	66.5	85	68	65.3	72	sw-e.	2	3	30.11	30.02	0.00
6	30.07	73	67	83	67	63.5	65	e-ne.	3	3	30.12	30.03	0.10
7	30.05	73	66.5	81	69	64.0	70	ene-nne.	3-5	8-3	30.15	30.01	0.00
8	29.99	70	65	82	72	62.5	63	ne.	3	3	30.09	29.99	0.01
9	29.96	68	66	82	70	61.5	64	ne.	3-5	1	30.00	29.90	0.13
10	29.95	67	66	78	66	63.3	73	ne.	4	8-2-8	30.00	29.90	0.42
11	29.99	70	66.5	75	66	66.5	87	ene.	4	9	30.05	29.95	0.60
12	30.00	73	67	79	69	65.5	75	ne.	4-5	6	30.06	29.97	0.11
13	29.99	73	67	80	70	65.0	71	ne.	3	5	30.05	29.96	0.16
14	29.96	68	65	81	73	63.7	65	ene.	4	3	30.03	29.95	0.00
15	29.96	70	66.5	83	68	63.3	67	nne.	2	1	30.02	29.92	0.05
16	30.01	68	64.5	81	69	64.0	67	ne.	2	3-6	30.05	29.97	1.33
17	30.00	68	59.5	74	66	59.0	69	nne.	4-6	7	30.04	29.98	0.00
18	29.97	64	62	73	67	55.3	60	nne.	4	9	30.06	29.94	0.25
19	29.95	66	62	74	62	58.0	68	nne.	4	7	30.01	29.94	0.29
20	29.96	71	64	75	63	61.7	76	ne.	3	8	30.00	29.93	0.06
21	29.95	70	65	78	68	62.0	69	nne.	4	7	30.02	29.93	0.09
22	29.96	71	66.5	79	67	63.5	72	ne.	3	6-3	30.02	29.93	0.01
23	29.96	71	66.5	79	70	65.0	78	ne.	3	9-4	30.02	29.95	0.18
24	29.97	69	67	80	69	66.0	76	ne.	3	7	30.08	29.97	0.31
25	29.97	66	65.5	79	68	65.7	78	ne.	2	8-10	30.04	29.95	0.82
26	29.94	66	64.5	80	66	66.5	84	sw-w-ne	1-0	4-8-0	30.01	29.92	0.29
27	29.92	68	66	81	64	66.0	81	sw-w-ne	0-2	1-6-0	29.99	29.91	0.01
28	29.90	65	64	81	65	66.5	80	sw-w-ne	0-2	0-7-0	29.96	29.87	0.00
29	29.95	63	61	79	64	64.3	78	n-s-w.	0-2	8-0	29.98	29.89	0.00
30	29.98	64	60	78	61	59.5	69	sw-ne.	1	6-0	30.02	29.94	0.00
Sums.													5.23
Means.	29.982	68.9	65.0	79.4	67.0	63.3	71.7		2.7	4.8	30.044	29.943	
Departure.	−0.20					0.0	0.0			−0.3			+2.24

Mean temperature for April, 1900 (6 + 2 + 9) ÷ 3 = 72.8; normal is 72.8. Mean pressure for April (9 + 3) ÷ 2 is 29.898; normal is 30.018.

*This pressure is as recorded at 1 p. m., Greenwich time. †These temperatures are observed at 6 a. m., local, or 7:29 p. m., Greenwich time. ‡These values are the means of (6+9+2+9)+4. §Beaufort scale. ‖3-10-0. ¶1-0-10.

MEXICAN CLIMATOLOGICAL DATA.

Through the kind cooperation of Señor Manuel E. Pastrana, Director of the Central Meteorologic-Magnetic Observatory, the monthly summaries of Mexican data are now communicated in manuscript, in advance of their publication in the Boletin Mensual. An abstract, translated into English measures, is here given, in continuation of the similar tables published in the MONTHLY WEATHER REVIEW since 1896. The barometric means have not been reduced to standard gravity, but this correction will be given at some future date when the pressures are published on our Chart IV.

Mexican data for April, 1900.

Stations.	Altitude.	Mean barometer.	Temperature. Max.	Temperature. Min.	Temperature. Mean.	Relative humidity.	Precipitation.	Prevailing direction. Wind.	Prevailing direction. Cloud.
	Feet.	*Inch.*	° *F.*	° *F.*	° *F.*	%	*Inch.*		
Arteaga (Coahuila)	.....	.....	87.8	50.0	70.7	.....	.....	.....	.....
Culiacan Rosales (Sinaloa)	112	29.72	90.5	62.6	75.4	47	.....	w.	.....
Durango (Seminario)	6,243	23.98	84.2	42.8	60.6	35	.....	sw.	w.
Gral Zepeda (Coahuilla)	.....	.....	100.4	41.0	71.8	.....	.....	.....	.....
Guanajuato	6,640	23.66	88.5	48.2	67.6	38	0.14	wsw.	sw.
Leon (Guanajuato)	5,934	24.24	89.2	44.2	67.3	37	T.	w.	w.
Mazatlan	25	29.91	81.0	61.3	72.7	71	.....	nw.	sw., w.
Merida	50	29.89	101.3	59.0	84.4	63	2.36	se.	se.
Mexico (Obs. Cent.)	7,472	23.01	86.0	46.4	64.8	42	0.79	sw.	sw.
Morelia (Seminario)	6,401	23.94	84.0	45.3	64.0	44	0.24	s.	w.
Parras (Coahuilla)	3,986	.....	88.7	49.1	73.0	.....	.....	.....	.....
Puebla (Col. Cat.)	7,112	23.35	84.2	48.6	67.8	48	0.02	ese., ssw.	sw.
Puebla (Col. d. Est.)	7,118	23.30	84.9	47.8	66.6	45	0.20	nne.	w.
Saltillo (Col. S. Juan)	5,399	24.66	84.7	38.8	65.1	55	T.	s.	sw.
San Isidro (Hac. de Guanajuato)	.....	.....	78.4	59.9	.....	.....	0.20	w.	.....
Silao	6,063	24.22	84.9	54.9	68.9	44	0.03	wsw.	w.
Tuxtla (Gutierrez Chiapas)	1,864	28.13	100.4	55.4	77.2	63	.....	nnw.	sse.

THE DROUGHT OF 1899 IN SOUTHWEST MISSOURI.

By Mr. J. S. HAZEN, Observer, Springfield, Mo.

The three months of dry weather, accompanied by long continued high temperature at Springfield, Mo., during the summer of 1899, proved a serious matter to nearly all classes of business, and a fruitful topic of discussion, in a climatological sense.

The fact of the drought being to some extent local, did not lessen the annoyance nor abate the suffering and loss to this community. The ground became dry to a depth of 4 feet, while for weeks at a time the country roads were almost impassible because of the dust. The corn crop was practically a failure; late fruits and garden truck nearly so, while the damage to lawns, meadows, pastures, and forest and fruit trees was severe. Numbers of trees died, many more shed their leaves prematurely with the probability that they may never recover their full vitality.

The accompanying numerical tables giving departures from normal conditions, for the years 1897 and 1899, show a remarkable similarity in many respects. Much of the rain which fell earlier in the season, in both years, occurred in heavy showers, and as a consequence a large amount of what might, with light or ordinary rains, have been surplus moisture, was lost to the soil before it could be absorbed. Many people claimed that the soil actually contained less moisture, and that the effect of the drought on vegetation was more noticeable in 1897 than was the case during the summer of 1899. Whether such a statement is true or not, I can not say, but the records of this office show that more rain fell during July and August, 1897, than during the same period for 1899. From August 14 to September 16, 1899, the rainfall was only 0.38 inch and only about three-fourths of an inch fell from July 30 to September 16, inclusive. When the fact is taken into consideration that no rainfall between June 15 and September 17, wet the soil more than 2 inches below the surface, we can more nearly appreciate the severity of the drought. In addition to the light rainfall the past summer was characterized by an excess of temperature, an abnormal amount of sunshine, and a high average wind velocity.

During the last ten days of August and the first ten days of September, 1899, the daily average excess in temperature was nearly 10°, while the total excess in daily temperatures from March 1 to October 10 was over 700°. There were but two days during August on which the temperature fell below normal.

During August and September, 1897, there was a longer period of continuous dry weather than was recorded during 1899. From August 21 to September 16, 1897, only 0.10 of an inch of rain fell, and during the entire month of September only 0.37 inch fell. The drought also extended well through October.

During July, August, and September, 1899, comparatively few upper clouds were observed, and from the middle of August until the middle of September, practically none were seen. During the summer of 1898, which was a year of abnormally heavy rainfall, upper clouds predominated, and but comparatively few distinctive cumulus clouds were recorded. During July, August, and September, 1899, an unusually large amount of the distinctive cumulus or fair weather type of clouds was observed. Cumulus clouds varying from a few to four-tenths were observed on twenty-one days during August. During the second week in September there was a period of six days on which no clouds were observed, and, as compared with the previous week, the temperature had fallen about 10°.

During the latter part of August and the first of September the change in the character of the clouds was gradual, but well marked. The cumulus type gradually took on a strato-